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Effect of the maternal environment on cortisone-induced cleft palate in mice

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Abstract OBJECTIVE: To investigate the maternal environment influence on cortisone-induced cleft palate in mice. METHODS: The A/WySn and the C3H/He strains of mice were used. Pregnant mice were injected on days 11 through 14 of gestation with 2.5 mg/mouse/day of cortisone. The A/WySn, C3H/He, F₁ hybrids and N₂ backcross fetuses that attained at least day 18 of development were checked for the presence of cleft palate. RESULTS: The frequency of fetuses with cleft palate and the ratio of dams bearing fetuses with cleft palate in the A/WySn strain (40.6% and 67.7%) were both significantly higher than those in the C3H/He (16.7% and 44.4%), F₁ (12.4% and 47.1%) and N₂ (24.0% and 55.3%) mice. The highest frequency of cleft palate was observed when the litter size was 8 in A/WySn, 7 in C3H/He, 8 and 9 in F₁, and 9 in N₂, respectively. CONCLUSION: The results suggested that the reaction to cortisone-induced cleft palate is different from the A/WySn and C3H/He strains of mice. The A/WySn strain of mice was more susceptible than the C3H/He strain of mice. The data suggest that litter size might play a role in defining cleft palate frequency.

Key words Cleft palate, Cortisone, Maternal environment effect, Mouse

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